

Assignment Cover Letter

(Individual Assignment)

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Course Code : COMP 6699

Course Name :

Object Oriented
Programming

Class : L2BC

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Major : Computer Science

Title of Assignment :

Vidco-19 Vaccine

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: 22 - 06 - 2021**

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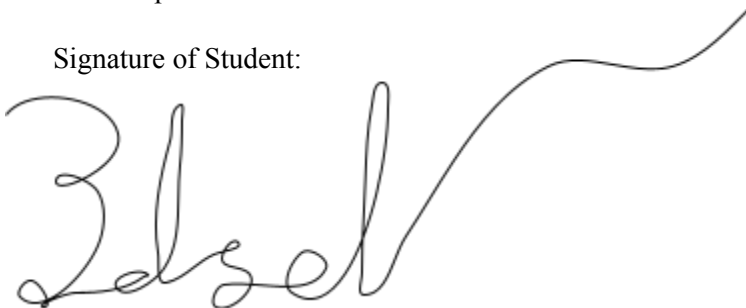
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Project Specification

The purpose of the program is to make a queue system for people that are going to get a vaccine for the new virus, Covid-19. With the pandemic, everyone is forced to keep a safe distance from each other. The program will help with social distancing because people can enter it through this program and do not need to see people to take the queue for vaccine covid-19 and also have a priority feature for the people who are age 65 above.

More specifications regarding the project are as follows:

- Menu of the program:
 - Option 1 (User data)
 - Name
 - Age
 - Legible or illegible
 - Option 2 (See list of all user)
 - Name,age,legible/illegible, number queue
 - Option 3 (Delete existing user)
 - Need to input the correct name and age
 - Option 4 (Quit and save the input to data.txt)
 - Will sort the data base on age is there are and also will save to

data.txt

Solution Design

The main features of the app are:

1. Taking all multiple inputs from the user. (Name,age,legible or illegible)
2. See all the existing user
3. Delete a user, need to input the correct name and age
4. Save the input to Data.txt and also close the program

There are 7 files in my program.

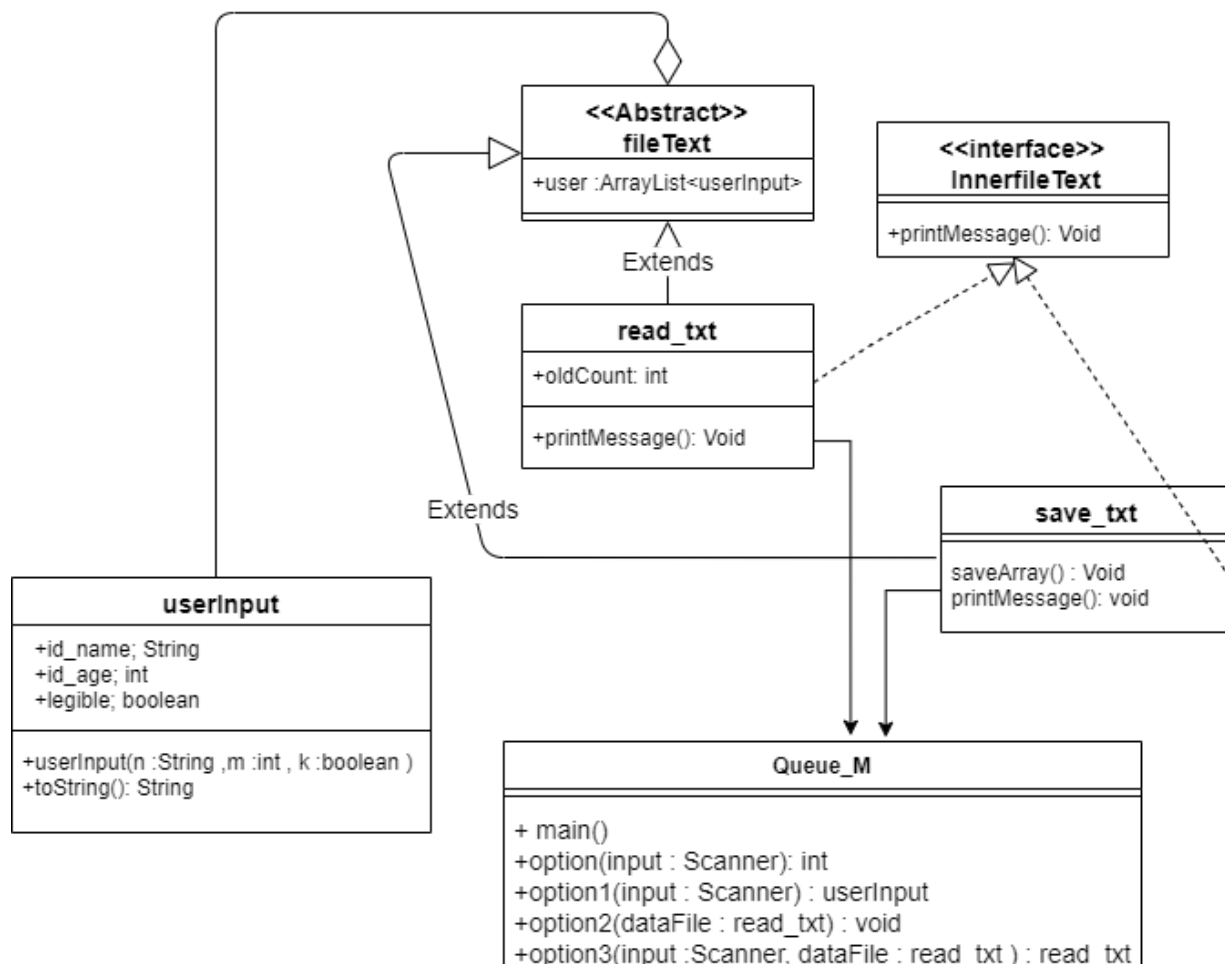
- Queue_m.java
- userInput.java
- fileText.java
- innerfileText.java
- Save_txt.java
- Read_txt.java

Implementation

```
• import java.util.Scanner; // for input
• import java.io.File; // to open file
• import java.io.FileNotFoundException; // need for opening file
• import java.io.FileWriter; // write the file
• import java.io.IOException; // need for write the file
• import java.util.ArrayList; /// array list for saving
• @Override // to override methods.
• read() // read the file
• nextLine() // search the next line of the file
• size() // the size of the file
• add() // adding the data
• sc.close() // closing scan
• toString() // change object into a string
```

UML Diagram

Vidco-19 Vaccine UML



How the program works

How the saving works and why choose Array list

When I was working on This project, I was thinking that I just need to save the user input to the data.txt file, but when I think again, it was a bad idea for the project to just save an input from the user. Because when the input from the user is just saved to the data.txt, all of the input will be messy and i was thinking on how to make a priority queue for the elderly that are age 65 above. Then I came up with an idea of using an array list. When I think about it again, using an array list to save the input from the user is the best course of action. When using an array list everything will be more organized, also when the program

searches for a specific name it will be easier, and lastly with an array list the program can make a priority queue for the elderly with the age of 65 above. When the program runs the user can input as many as they want. The program will convert every input into an object that will be converted again into an array list. When the program is close the array list will be organize by the program if there's a user that are age 65 above, they will be put in the front

How each file are used

Queue_m.java

```
Queue_m.java X save_txt.java fileText.java innerFileText.java userInput.java read_txt.java data.txt
Queue_m.java > Queue_m > Options(Scanner)
1 import java.util.Scanner;
2
3 public class Queue_m {
4     Run | Debug
5     public static void main(String[] args) {
6         //variables
7         Scanner input = new Scanner(System.in);
8         boolean quit = false;
9         read_txt readFile = new read_txt();
10        save_txt saveFile = new save_txt();
11        userInput user; //this is object
12
13        //load from data.txt
14        readFile.read();
15
16        //start the menu
17        while(!quit){
18            int choice = Options(input);
19            switch (choice) {
20                case 1:// for option 1
21                    user = Option_1(input);
22                    if(user.id_age > 65){
23                        readFile.users.add(readFile.oldCount, user);
24                    } else {
25                        readFile.users.add(user);
26                    }
27                    break;
28                case 2:
29                    Option_2(readFile);
30                    break;
31                case 3:
32                    readFile = Option_3(input, readFile);
33                    break;
34                case 4: // close the menu and also save
35                    System.out.println("Thankyou for using Vidco-19 vaccine queue");
36                    saveFile.users = readFile.users;
37                    saveFile.saveArray();
38                    quit = true;
39                    break;
40                default:
41                    System.out.println("Vo put the correct option, me mad >:{ ");
42                    break;
43            }
44            input.close();
45        }
46    }
}
```

```
Queue_m.java X save_txt.java fileText.java innerFileText.java userInput.java read_txt.java data.txt
Queue_m.java > Queue_m > Options(Scanner)
47 public static int Options(Scanner input){//basic menu
48 {
49     System.out.println("Welcome to Vidco-19 Vaccine line");
50     System.out.println("-----");
51     System.out.println("Please choose this options");
52     System.out.println("-----");
53     System.out.println("1 - Enter an user");
54     System.out.println("2 - Open an existing user");
55     System.out.println("3 - Delete existing user");
56     System.out.println("4 - Quit/Exit");
57     System.out.println("-----");
58     int choice = input.nextInt();
59     return choice;
60 }
61
62 public static userInput Option_1(Scanner input)
63 {
64     System.out.println("\n-----\n");
65     System.out.println("You have chosen option 1");
66     System.out.println("-----\n");
67     System.out.print("Please enter your name: \n");
68     String name = input.next(); //input
69     System.out.println("Please input your age: ");
70     int age = input.nextInt(); //input
71     System.out.println("\nWelcome user: " + name + "," + age);
72     System.out.println("");
73     System.out.println("Dear " + name + " , " + age);
74     System.out.println("Have you contracted with Vidco-19?(yes/no)");
75     String answer = input.next();
76     boolean legible = (answer.equals("no") && age>18) ? true : false; // if statement to check the user answer yes or no
77     String legibleMessage = (legible) ? "you are legible to take the vaccine :) \n": "you cannot take the vaccine unfortunately";
78     System.out.println(legibleMessage);
79     userInput newUser = new userInput(name, age, legible);
80     return newUser;
81 }
82
83 public static void Option_2(read_txt dataFile){ // read the data arraylist of every thing inside the data
84     System.out.println("Name Age Legibility Queue Number");
85     for(userInput user: dataFile.users){ // print the data queue and add number queue for easy read
86         String legible = (user.legible) ? "legible" : "illegible";
87         int queueNumber = dataFile.users.indexOf(user) + 1;
88         System.out.println(user.id_name + " " + user.id_age + " " + legible + " " + queueNumber);
89     }
90 }
91 }
```



```

public static read_txt Option_3(Scanner input, read_txt dataFile)//delete the data you want
{
    System.out.println("\n-----\n");
    System.out.println("You have chosen option 3");
    System.out.println("-----\n");
    System.out.print("Please enter the name: \n");
    String name = input.next(); //input
    System.out.println("Please input their age: ");
    int age = input.nextInt(); //input
    for(int i = 0; i < dataFile.users.size(); i++){// for searching each stuff inside the arraylist
        if(dataFile.users.get(i).id_name.equals(name) && dataFile.users.get(i).id_age == age){
            System.out.println(name + " deleted!");
            dataFile.users.remove(i);
            break;
        }
    }
    return dataFile;
}
}

```

Queue_m.java This file is for the user to start the program, this will also be the file for the menu for the program.

```

public static int Options(Scanner input)//basic menu
{
    System.out.println("Wellcome to Vidco-91 Vaccine line");
    System.out.println("-----");
    System.out.println("Please choose this options");
    System.out.println("-----");
    System.out.println("1 - Enter an user");
    System.out.println("2 - Open an existing user");
    System.out.println("3 - Delete existing user");
    System.out.println("4 - Quit/Exit");
    System.out.println("-----");
    int choice = input.nextInt();
    return choice;
}

```

is the main code to run the program, and also where the menu is.

Then I also use switch choice to make the while loop to be clean looking

```
1 import java.util.Scanner;
2
3 public class Queue_m{
4     public static void main(String[] args) {
5         //variables
6         Scanner input = new Scanner(System.in);
7         boolean quit = false;
8         read_txt readFile = new read_txt();
9         save_txt saveFile = new save_txt();
10        userInput user; //this is object
11
12        //load from data.txt
13        readFile.read();
14
15        //start the menu
16        while(!quit){
17            int choice = Options(input);
18            switch (choice) {
19                case 1:// for option 1
20                    user = Option_1(input);
21                    if(user.id_age > 65){
22                        readFile.users.add(readFile.oldCount, user);
23                    } else {
24                        readFile.users.add(user);
25                    }
26                    break;
27                case 2:
28                    Option_2(readFile);
29                    break;
30                case 3:
31                    readFile = Option_3(input, readFile);
32                    break;
33                case 4: // close the menu and also save
34                    System.out.println("Thankyou for using Vidco-19 vaccine queue");
35                    saveFile.users = readFile.users;
36                    saveFile.saveArray();
37                    quit = true;
38                    break;
39                default:
40                    System.out.println("Yo put the correct option, me mad >:( ");
41                    break;
42            }
43        }
44        input.close();
45    }
46}
```

option 1 they can input their name ,age, and there will be a question that will determine if the user is eligible to take the queue or not. Because of the input of the user, the program needs to save the input. So the program will convert the user input into an object type, and then will be converted into an Array list. With an Array list, the user input will be more organized and also much easier to search for a specific name by the program.

```

61
62 public static userInput Option_1(Scanner input)
63 {
64     System.out.println("\n-----\n");
65     System.out.println("You have chosen option 1");
66     System.out.println("-----\n");
67     System.out.print("Please enter your name: \n");
68     String name = input.next(); //input
69     System.out.println("Please input your age: ");
70     int age = input.nextInt(); //input
71     System.out.println("\nWelcome user: " + name + ", " + age);
72     System.out.println("");
73     System.out.println("Dear " + name + ", " + age);
74     System.out.println("Have you contracted with Vidco-19?(yes/no)");
75     String answer = input.next();
76     boolean legible = (answer.equals("no") && age > 18) ? true : false; // if statement to check the user answer yes or no
77     String legibleMessage = (legible) ? "\nyou are legible to take the vaccine :) \n": "\nyou cannot take the vaccine unfortunately";
78     System.out.println(legibleMessage);
79     userInput newUser = new userInput(name, age, legible);
80     return newUser;
81 }
82

```

Option 2 will check all of the inside of the data.txt and then will print the data in the terminal with a range of name, age, legible/illegible, queue number. This option is useful if the operator/user wants to see their data.

```

82
83 public static void Option_2(read_txt dataFile){// read the data arraylist of every thing inside the data
84     System.out.println("Name    Age    Legibility    Queue Number");
85     for(userInput user: dataFile.users){// print the data queue and add number queue for easy read
86         String legible = (user.legible) ? "legible" : "illegible";
87         int queueNumber = dataFile.users.indexOf(user) + 1;
88         System.out.println(user.id_name + "    " + user.id_age + "    " + legible + "    " + queueNumber);
89     }
90 }
91

```

Option 3 is to delete a user, this is useful if the user wants to delete their data. To use option 3 the user needs to input a specific name and also age.

```

90 }
91
92 public static read_txt Option_3(Scanner input, read_txt dataFile){//delete the data you want
93 {
94     System.out.println("\n-----\n");
95     System.out.println("You have chosen option 3");
96     System.out.println("-----\n");
97     System.out.print("Please enter the name: \n");
98     String name = input.next(); //input
99     System.out.println("Please input their age: ");
100     int age = input.nextInt(); //input
101     for(int i = 0; i < dataFile.users.size(); i++){// for searching each stuff inside the arraylist
102         if(dataFile.users.get(i).id_name.equals(name) && dataFile.users.get(i).id_age == age){
103             System.out.println(name + " deleted!");
104             dataFile.users.remove(i);
105             break;
106         }
107     }
108     return dataFile;
109 }
110 }
111

```

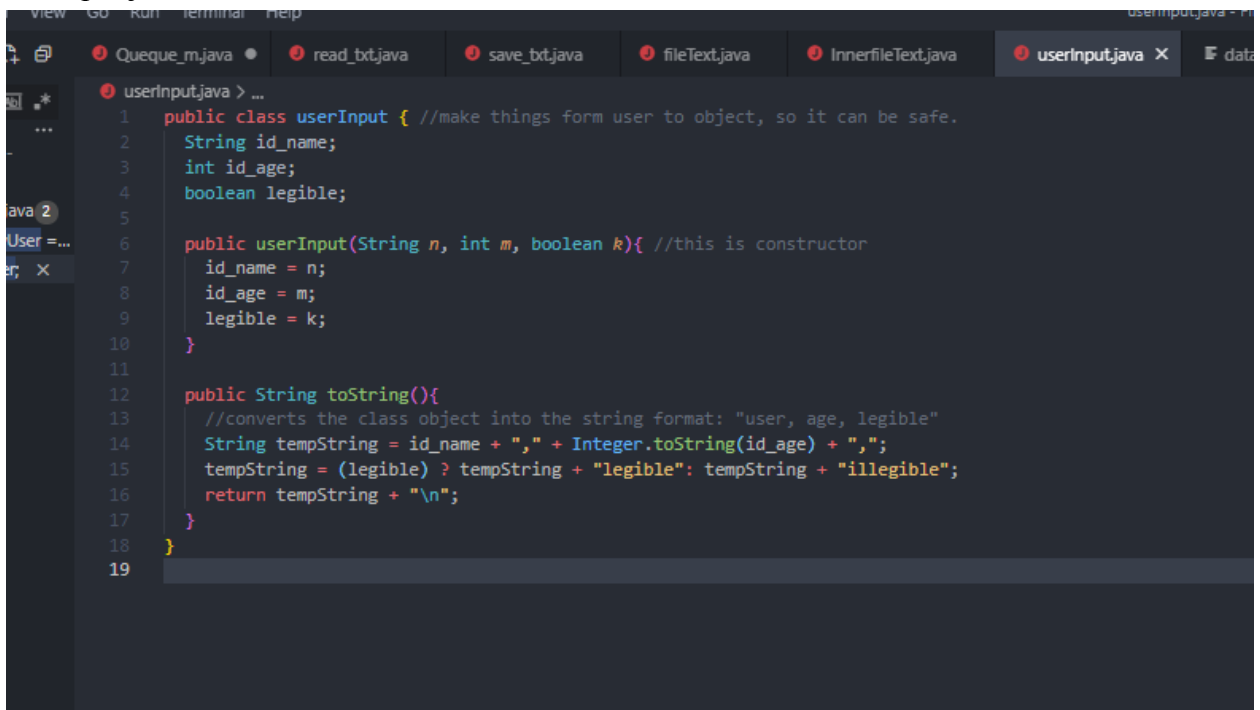
Option 4 is to save the input of the user to the data.txt and also to end the program.

```

33     break;
34     case 4: // close the menu and also save
35         System.out.println("Thankyou for using Vidco-19 vaccine queue");
36         saveFile.users = readFile.users;
37         saveFile.saveArray();
38         quit = true;
39         break;
40     default:
41         System.out.println("Yo put the correct option, me mad >:( ");
42         break;
43     }
44     input.close();

```

userInput.java



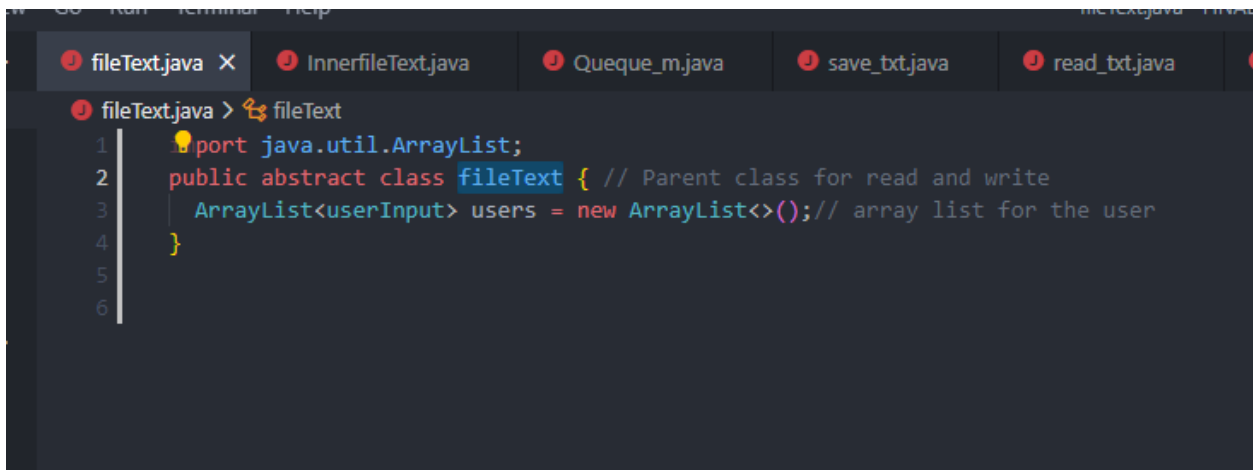
```

1  public class userInput { //make things form user to object, so it can be safe.
2      String id_name;
3      int id_age;
4      boolean legible;
5
6      public userInput(String n, int m, boolean k){ //this is constructor
7          id_name = n;
8          id_age = m;
9          legible = k;
10     }
11
12     public String toString(){
13         //converts the class object into the string format: "user, age, legible"
14         String tempString = id_name + "," + Integer.toString(id_age) + ",";
15         tempString = (legible) ? tempString + "legible": tempString + "illegible";
16         return tempString + "\n";
17     }
18 }
19

```

to change the type of the input from string,int and bool, into an object.The userInput() is for the constructor and the toString() is for to change the format into an string.

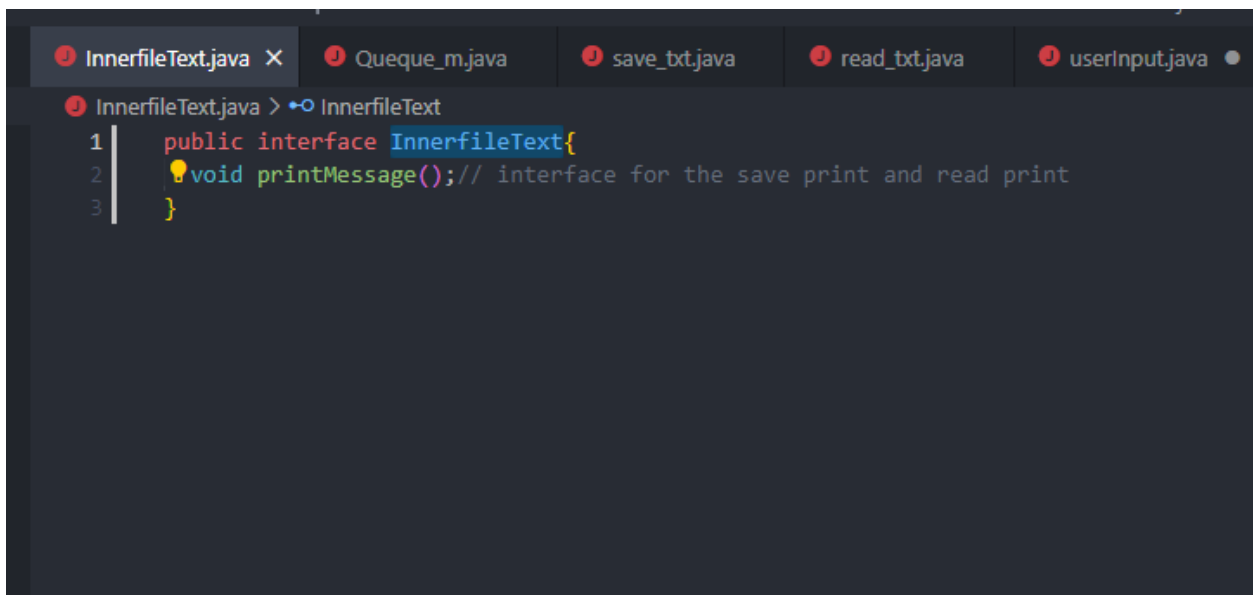
fileText



```
fileText.java > fileText
1  import java.util.ArrayList;
2  public abstract class fileText { // Parent class for read and write
3      ArrayList<userInput> users = new ArrayList<>(); // array list for the user
4  }
5
6
```

This class is to make the array list, and also make the variable called users.

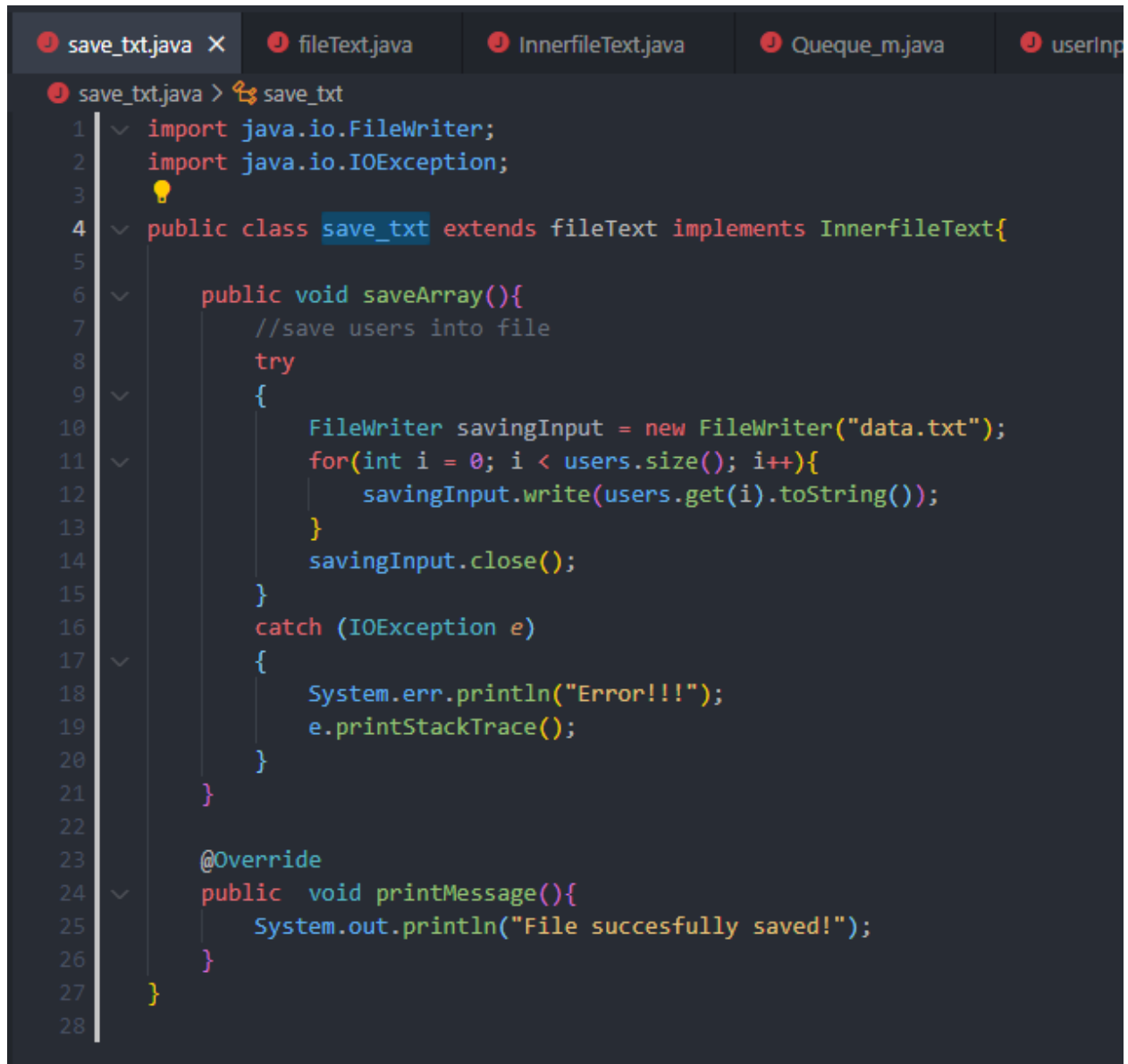
InnerfileText



```
InnerfileText.java > InnerfileText
1  public interface InnerfileText{
2      void printMessage();// interface for the save print and read print
3  }
```

The printMessage() is going to be used in the **save_txt** and also the **read_txt**, this method is for printing a specific message in the **save_txt** and **read_txt**.

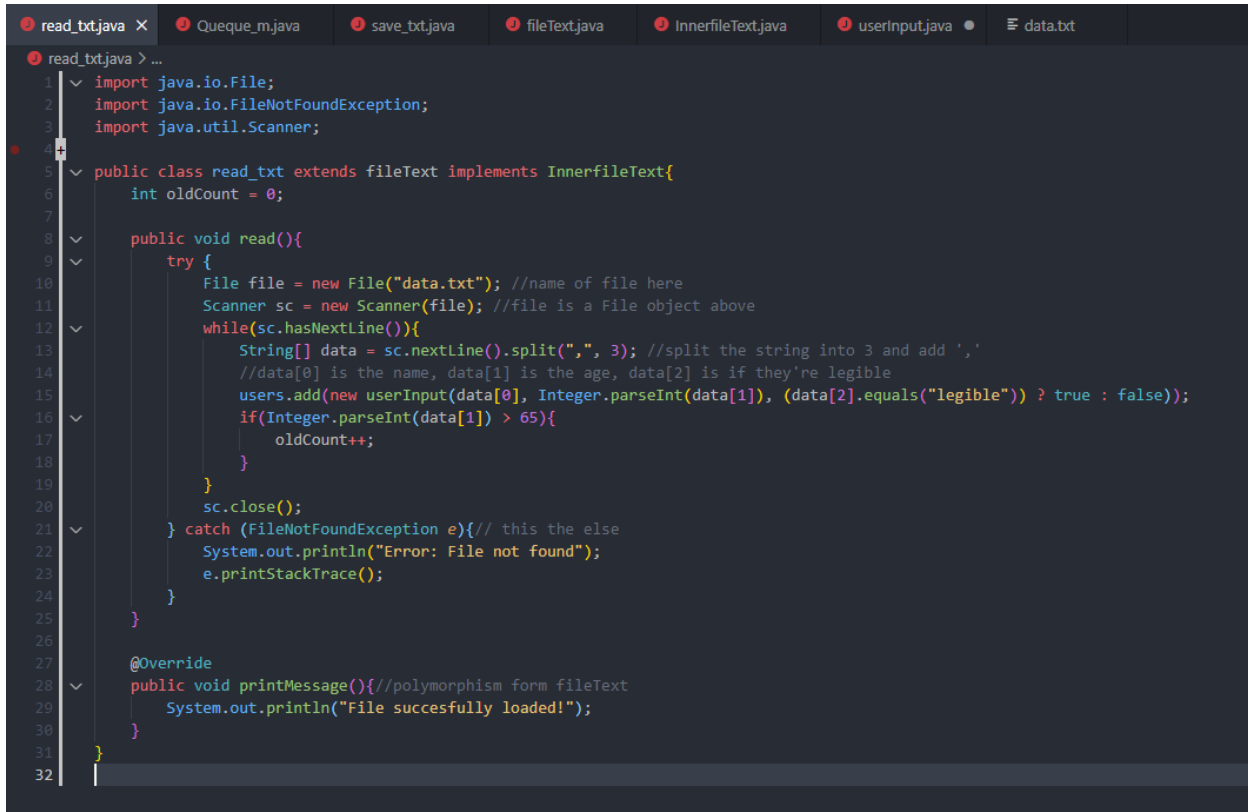
save_txt



```
1  import java.io.FileWriter;
2  import java.io.IOException;
3
4  public class save_txt extends fileText implements InnerfileText{
5
6      public void saveArray(){
7          //save users into file
8          try
9          {
10             FileWriter savingInput = new FileWriter("data.txt");
11             for(int i = 0; i < users.size(); i++){
12                 savingInput.write(users.get(i).toString());
13             }
14             savingInput.close();
15         }
16         catch (IOException e)
17         {
18             System.err.println("Error!!!");
19             e.printStackTrace();
20         }
21     }
22
23     @Override
24     public void printMessage(){
25         System.out.println("File succesfully saved!");
26     }
27 }
28
```

This file is to save the input from the user. The `save_txt.java` needs to extend the **fileText.java** for the array list, and needs to implement the **InnerfileText.java** to print if the file is successful to save or not. The program will put the input from user into the **userInput.Java**, after the data being converted into an object and then into a string, it's going to be save by this class. By using `saveArray()` it will use the filewriter to save the input into a `data.txt` file. The if statement is to keep checking the input and save it into the **data.txt**, it will keep checking the input till there's no more input from the user.

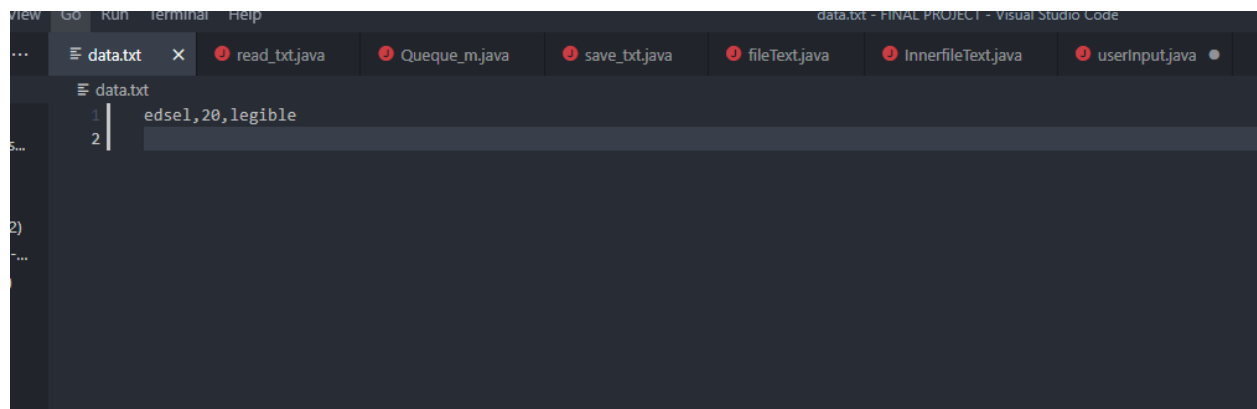
read_txt



```
1  import java.io.File;
2  import java.io.FileNotFoundException;
3  import java.util.Scanner;
4
5  public class read_txt extends fileText implements InnerfileText{
6      int oldCount = 0;
7
8      public void read(){
9          try {
10             File file = new File("data.txt"); //name of file here
11             Scanner sc = new Scanner(file); //file is a File object above
12             while(sc.hasNextLine()){
13                 String[] data = sc.nextLine().split(",", 3); //split the string into 3 and add ','
14                 //data[0] is the name, data[1] is the age, data[2] is if they're legible
15                 users.add(new userInput(data[0], Integer.parseInt(data[1]), (data[2].equals("legible")) ? true : false));
16                 if(Integer.parseInt(data[1]) > 65){
17                     oldCount++;
18                 }
19             }
20             sc.close();
21         } catch (FileNotFoundException e){// this the else
22             System.out.println("Error: File not found");
23             e.printStackTrace();
24         }
25     }
26
27     @Override
28     public void printMessage(){//polymorphism form fileText
29         System.out.println("File succesfully loaded!");
30     }
31 }
32
```

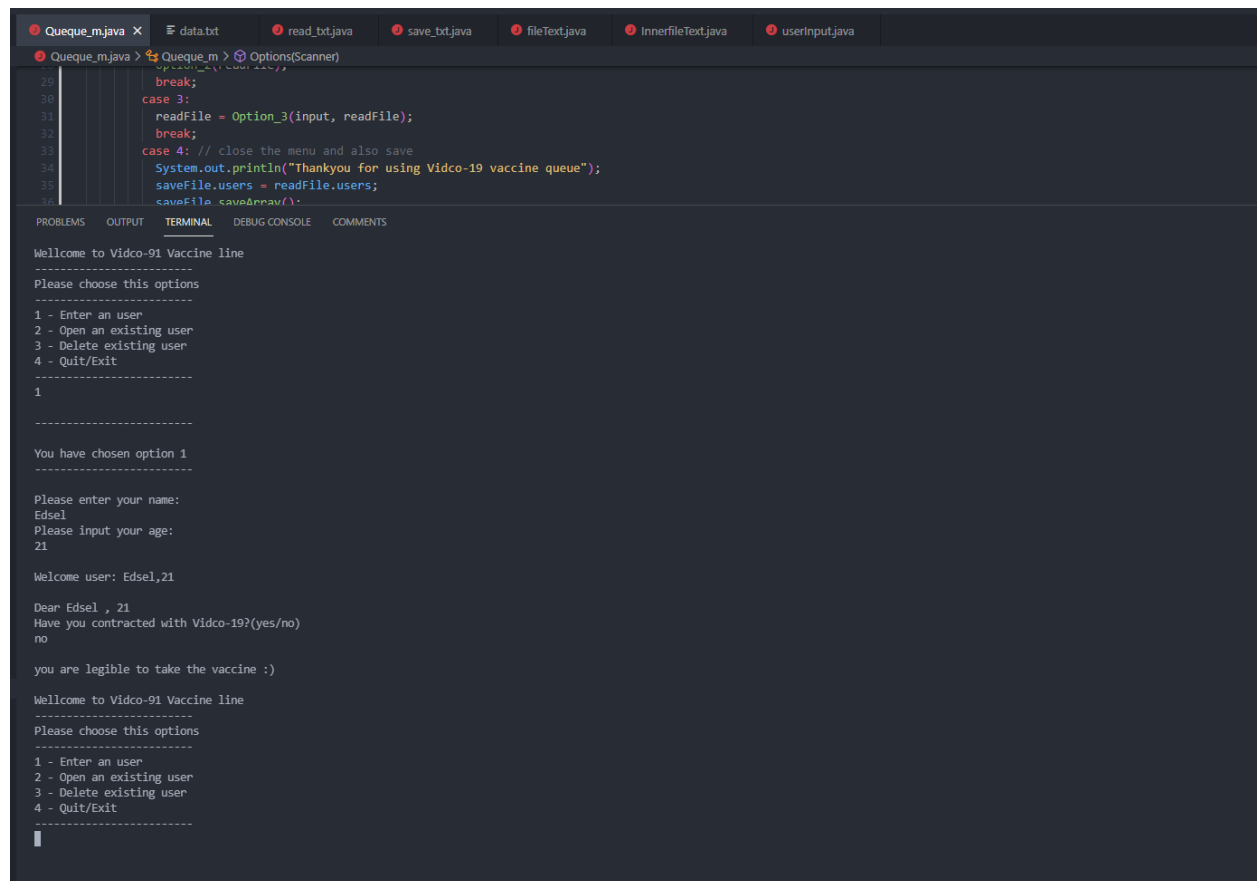
The **read_txt.java** will extend from the **fileText.java** to get the array and then it will implement the **InnerfileText.java** to print if the file is loaded or not . This is to be used for reading the input from the user and also the **data.txt**, then it will print the data into the terminal. **read()** is for the program to read all of the data in the input then it will combine it with the user input. It will keep adding new user, until the user end the program where the data will be stored in the **data.txt** . also the **oldCount** is the priority queued, the program will check if the age of each user, then if the program finds that there's a user that are above the age of 65 it will push the user into the index 0, then if there's also another old person it will keep adding after the first old user. That's the **oldCount ++** for.

data.txt

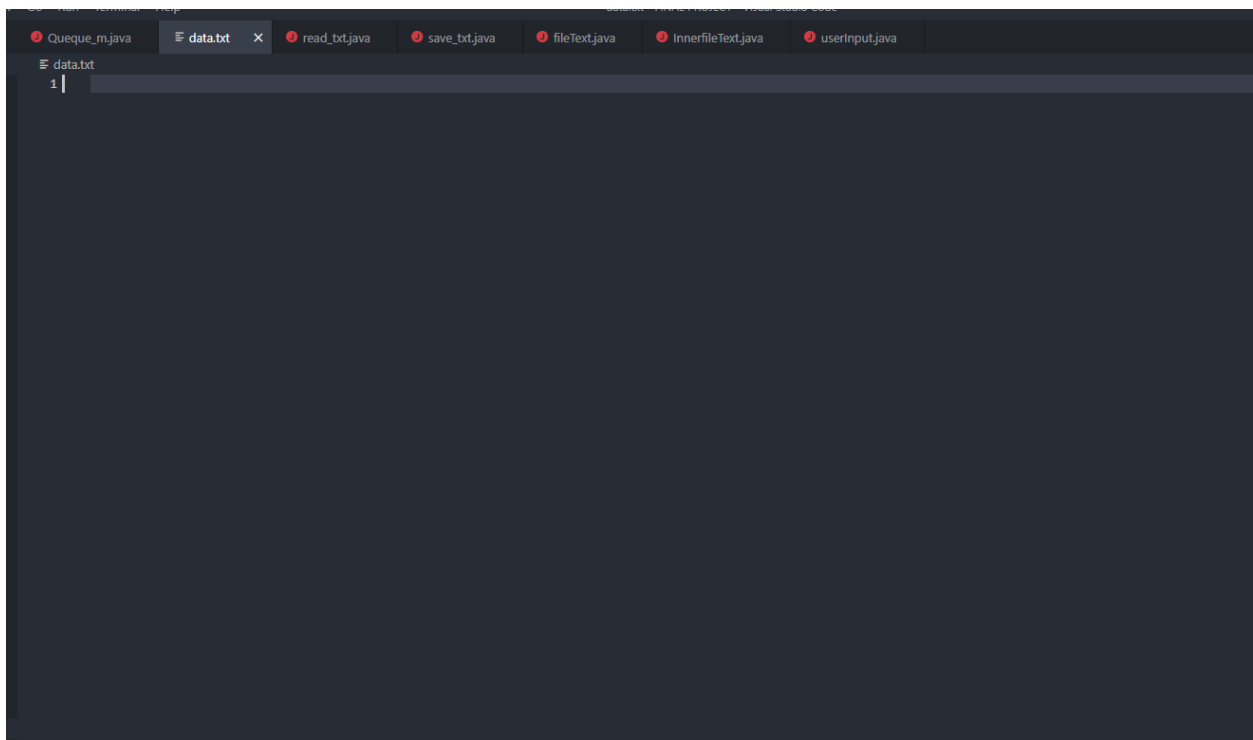


This is where the input from the user will be saved, the data.txt will have the following format to save name,age,then legible/illegible.

Screenshots of Working Program



This is the program running



Empty data. This is the proof that the data is still empty and have not been added.

```
ew  Go  Run  Terminal  Help  data.txt - FINAL PROJECT - Visual Studio Code
Queue_m.java  data.txt  read_txt.java  save_txt.java  fileText.java  InnerfileText.java  userInput.java

data.txt
1 | Edsel,21,legible
2 |

PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE  COMMENTS

Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
1
-----

You have chosen option 1
-----

Please enter your name:
Edsel
Please input your age:
21

Welcome user: Edsel,21

Dear Edsel , 21
Have you contracted with Vidco-19?(yes/no)
no

you are legible to take the vaccine :)

Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
4
Thankyou for using Vidco-19 vaccine queue
PS E:\BINUS\Semester 2\OOP sir jude\Task\FINAL PROJECT>
```

This is after the program is save and quit.

The screenshot shows an IDE with a Java file named `Queue_m.java` and its execution output in the terminal. The code implements a menu-driven system for a vaccine queue. The terminal output shows the user selecting option 1, entering the name 'jade' and age '80', and being added to the queue. The program then displays the queue details.

```
Queue_m.java > Queue_m > main(String[])
20 break;
21 case 3:
22     readFile = Option_3(input, readFile);
23     break;
24 case 4: // close the menu and also save
25     System.out.println("Thankyou for using Vidco-19 vaccine queue");
26     saveFile.users = readFile.users;
27     saveFile.saveAnnay();
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE COMMENTS

```
1
-----
You have chosen option 1
-----

Please enter your name:
jade
Please input your age:
80

Welcome user: jade,80

Dear jade , 80
Have you contracted with Vidco-19?(yes/no)
no

you are legible to take the vaccine :)

Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
2
Name Age legibility Queue Number
jade 80 legible 1
Edsel 21 legible 2
Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----

```

Ln 33, Col 48 Spaces: 2 UTF-8 CRLF java Go Live hite: ready JavaSE

this is adding a new user name jade who is 80 years old, and this is the program if the user choose option 2, it will show all the user.

```
Queue_m.java  data.txt  read_txt.java  save_txt.java  fileText.java  InnerfileText.java  userInput.java
data.txt
1 jade,80,legible
2 Edsel,21,legible
3

PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE  COMMENTS
-----
You have chosen option 1
-----

Please enter your name:
jade
Please input your age:
80

Welcome user: jade,80

Dear jade , 80
Have you contracted with Vidco-19?(yes/no)
no

you are legible to take the vaccine :)

Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
2
Name  Age  Legibility  Queue Number
jade  80   legible     1
Edsel  21   legible     2
Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
4
Thankyou for using Vidco-19 vaccine queue
PS E:\BINUS\Semester 2\OOP sir jude\Task\FINAL PROJECT>
```

Jade is being put into the index 0 because Jade is in the priority queue because of the age.

```
Thankyou for using Vidco-19 vaccine queue
PS E:\BINUS\Semester 2\OOP sir jude\Task\FINAL PROJECT> cd "e:\BINUS\Semester 2\OOP sir jude\Task\FINAL PROJECT\" ; if ($?) { javac Queue_m.java } ; if ($?) { java Queue_m }
Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
3
-----
You have chosen option 3
-----

Please enter the name:
Edsel
Please input their age:
21
Edsel deleted!
Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----

```

This screen shot is to show the program successfully delete the user.

```
data.txt
1 jade,80,legible
2

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE COMMENTS

Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
4
Thankyou for using Vidco-19 vaccine queue
PS E:\BINUS\Semester 2\OOP sir jude\Task\FINAL PROJECT> cd "e:\BINUS\Semester 2\OOP sir jude\Task\FINAL PROJECT\" ;
Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
3

-----

You have chosen option 3
-----

Please enter the name:
Edsel
Please input their age:
21
Edsel deleted!
Wellcome to Vidco-91 Vaccine line
-----
Please choose this options
-----
1 - Enter an user
2 - Open an existing user
3 - Delete existing user
4 - Quit/Exit
-----
4
Thankyou for using Vidco-19 vaccine queue
PS E:\BINUS\Semester 2\OOP sir jude\Task\FINAL PROJECT> |
```

after the user choose option 4, save and close, my data will be updated.